



NASA PRINCIPAL CENTER FOR REGULATORY RISK ANALYSIS AND COMMUNICATION

NASA's Agency-Wide Strategy for Environmental Regulatory Risk Analysis and Communication

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Agenda

- **Overview: NASA Program Transition**
- **Overview: Principal Center for Regulatory Risk Analysis and Communication (RRAC PC)**
- **Regulatory Tracking and Communication Process**





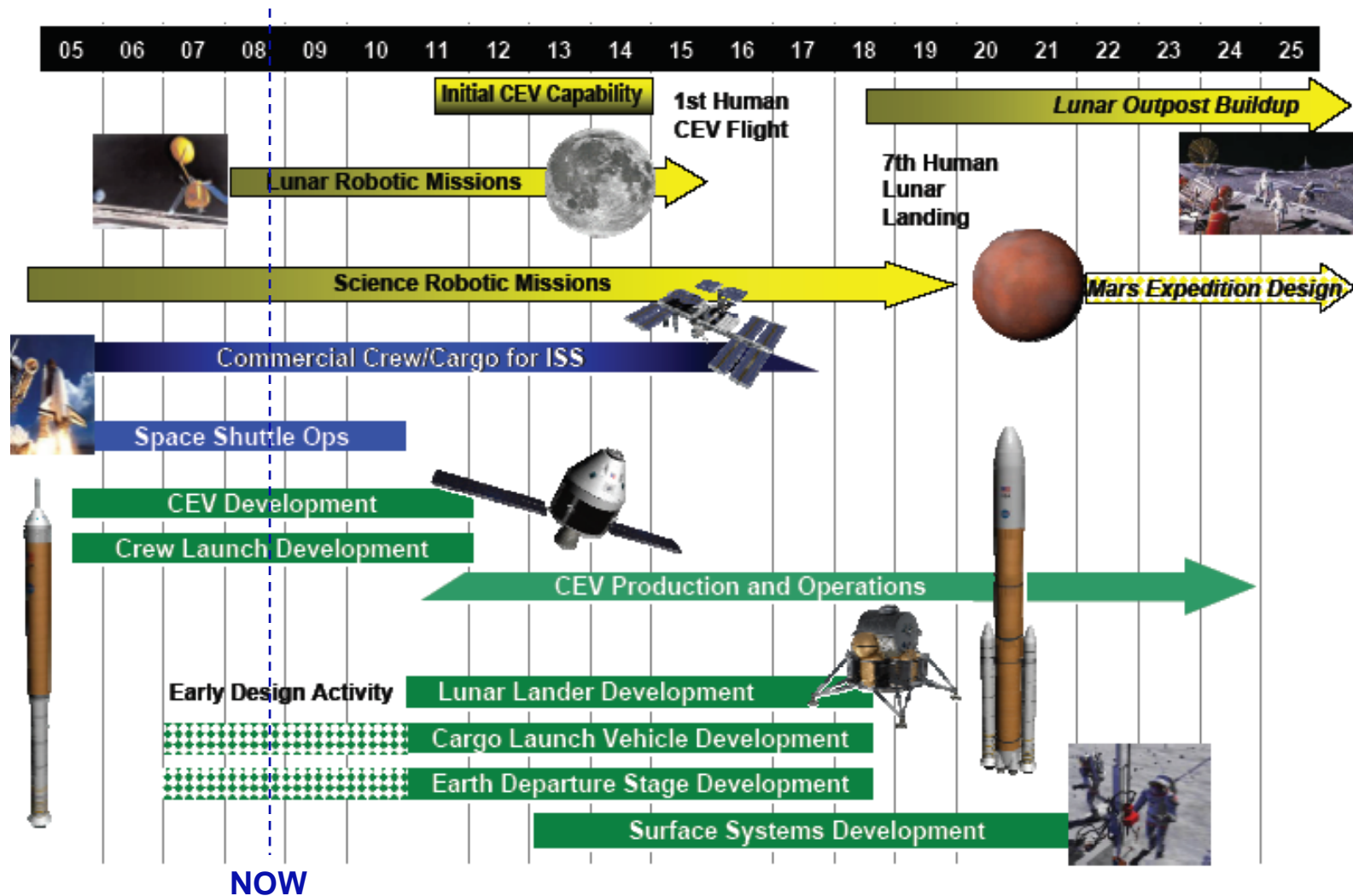
Program Transition

- **Vision:**
 - “To advance U.S. scientific, security, and economic interests through a robust space exploration program.”
- **NASA Strategic Goals 2006-2016, *NASA 2006 Strategic Plan***
 - Complete International Space Station
 - Safely fly Space Shuttle until 2010
 - Develop and fly Crew Exploration Vehicle before 2014
 - Return to the Moon before 2020
 - Promote international and commercial participation
 - Develop supporting innovative technologies, knowledge, and infrastructures
 - Implement sustained and affordable human and robotic programs





NASA's Space Vehicle Timeline





Program Transition

- **NASA plans for the Constellation Program's vehicle designs to have long service lives**
 - Even more important to incorporate sustainable designs to avoid future regulatory issues and operational obsolescence
 - Important to consider:
 - ❖ *Materials selection to avoid obsolescence*
 - Design for obsolescence avoidance in long service-life programs
 - Minimize environmentally high-risk materials





RRAC PC Overview

- **NASA's Agency-wide resource for identifying and managing risks associated with changing environmental regulations**
- **Goals of the RRAC PC**
 - Proactively detect, analyze and communicate environmental regulatory risks to NASA Programs and facilities
 - Communicate with regulators and participate in the mitigation of such risks
 - Provide centralized support on emerging regulations to NASA HQ Environmental Management Division





RRAC PC Focus in Perspective

Risks posed by the Program to the environment

- Identified under NEPA through the Environmental Impact Statement (EIS) process **prior to Program inception**
- The EIS describes programmatic options and addresses environmental considerations associated with each, usually in a one-time effort

Risks posed to the Program by environmentally-related drivers

- On-going effort through the life of the Program
- Risk to Program grows with time due to changes in laws and regulations
- Active participation in legislative and rulemaking processes reduces Program risk



Regulations Can Drive Program Risks

- **Changing regulations have the potential to affect program activities directly and indirectly**
 - Could **restrict certain activities, operations, or right to operate**
 - ❖ *Changes in operational activities*
 - High-efficiency spray equipment
 - Quantities of thinner allowed for coating application
 - ❖ *Limitations on where or how operations can take place*
 - In spray booths rather than “in the field”
 - Require dipping or brushing instead of spraying
 - ❖ *Changes to protective equipment requirements*





Regulations Can Drive Program Risks

- Could **affect availability and usage of materials**
 - ❖ *Production phase-out or restriction on ability to apply or use materials*
 - ODSs, brominated flame retardants, and others
 - ❖ *Formulation changes by vendors to critical materials and/or components*
 - Despite contractual notification clauses, can happen without notification
 - ❖ *May require material replacement efforts*
 - Replacement costs; potential schedule impacts; potential performance variance





RRAC PC Regulatory Monitoring

- **Evolving applicability and relevance guidelines**

- Programmatic

- ❖ *human spaceflight, other space vehicles, aeronautics programs*
- ❖ *direct and indirect impacts*
- ❖ *critical supply chain issues*

- Facilities

- ❖ *NASA Centers*
- ❖ *Other critical processing facilities*
- ❖ *Emergency landing sites abroad*

**Lesson
Learned**

Recognize that the requirements of Programs and supporting Facilities CHANGE and that those changes can affect the applicability of emerging regulatory requirements

- **Example: Regulatory applicability thresholds**





Regulatory Tracking Process

RRAC PC Regulatory Monitoring

- **Monitor emerging regulatory information from appropriate sources**
 - “Official” Sources
 - ❖ *Federal Register, Semiannual Regulatory Agenda, State regulatory notices*
 - ❖ *Other countries and international organizations*
 - Other Sources
 - ❖ *Regular communication with regulators*
 - ❖ *Networks with other stakeholders, especially other Federal agencies*
 - ❖ *Global trends*

Lessons Learned

1. **Statutory and regulatory requirements CHANGE**
2. **Just because a requirement doesn’t affect you directly, doesn’t mean it will not impact your operations at some point in time**
3. **The best information on emerging requirements is often found on the “grapevine”**
 - **Example: European Union regulations and international partnerships**





RRAC PC Regulatory Communication

- **When significant regulatory changes are identified, timely communication is essential**
 - Communication of changing requirements to the regulatory stakeholders – NASA Programs and Facilities
 - Communication of potential issues to management and, when appropriate, back to the regulating agency





Regulatory Communications Process

RRAC PC Regulatory Communication

- **Communicate regulatory changes to the affected NASA Community**
 - General alerts and summaries
 - Specifically-targeted technical working groups
- **Solicit feedback on potential impacts from emerging regulatory changes**
 - Direct or indirect impacts
 - Short-term or long-term
 - Include worst-case scenario

Lessons Learned

1. Insist on knowing your technical community; they are the ones who know when a “potential impact” becomes an “issue”
2. For potentially mission-critical impacts, don’t assume the information will filter to the right person or organization – HUNT THEM DOWN
3. Don’t assume your Program is immune just because the requirement doesn’t directly affect you – you rely on your SUPPLY CHAIN
4. In determining potential impacts, be twice as pessimistic as the life of your Program





RRAC PC Regulatory Communication

- **Communicate identified impacts to management**
 - Assess mitigation options
 - Follow the “greenest” path that still meets Mission requirements
- **When necessary, communicate issues to regulators**
 - Sometimes mission-critical technical performance or safety-related factors must be considered
 - Collaboration with regulators can produce effective, innovative regulatory solutions

Lessons Learned

1. **Honest, open bilateral communications with regulators is essential**
2. **Focusing on technical requirements, data, and Mission success goes a long way toward establishing credibility**
3. **A clear, proven COMMITMENT TO DO THE RIGHT THING speaks volumes**





RRAC PC Lessons Learned

- **Programs and Centers are dynamic... so are regulations**
 - Just because regulations may not initially apply does not mean they will not in the future
 - Just because regulations may not directly affect operations does not mean they won't affect the program indirectly through the supply chain
- **Communication is key when it comes to regulatory impacts**
 - Up and down the chain of command to ensure the right organizations and people are informed
- **Maintaining a “do the right thing” commitment is critical to the long-term success of programs and should be a significant part of a strategy for compliance**





Questions?

- **For further information, please contact:**

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